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We cannot sympathise with Littré's method of constructing ethics upon the nutritive and sexual instincts, the former producing egotism, the latter altruism. Emotions are, says Littré, as much as ideas, the result of brain-processes in consequence of external impressions and "the struggle between both kinds of emotion make up the moral life." Littré rejects the evolution theory and its attempts to explain ethics. (See Gruber's book p. 20.) Having explained our views of ethics on other occasions, it is sufficient here to state that we consider Littré's attempt as a failure. We cannot even adopt the so-called "positive method," of which Littré says: "Whoever adopts this method is a positivist and whether he acknowledges the fact or not, also a disciple of Comte. Whoever employs another method is a metaphysician. It is the surest mark by which a careful mind will discriminate what belongs to the positive philosophy and what is foreign to it." What is this method? Says Littré: "It is an acknowledged principle of positive science that nothing real can be stated through reasoning (*raisonnement*). The world cannot be guessed." Littré is opposed to so-called *a priori* arguments. Hermann Gruber says in the préface: "This positive method is embraced by all the representatives of the lines of thought here discussed. All of them intend to build up their systems with the exclusion of scholastic, respectively of Kantian, Hegelian, or any *a priori* speculations after purely 'scientific' methods upon the foundation of the facts of experience." We certainly intend to build our world conception "upon the facts of experience" but the most important facts among them are their formal relations and these formal relations when represented in thought are exactly that element which Kant called *a priori*. The sense-element affords us the building stones, but the *a priori* element represents the mortar without which we could not build. So much do we oppose this one-sided philosophy which takes its stand upon what is wrongly called the purely scientific method, that our views have been called the Philosophy of Form, and justly, for Form is that feature of the world which makes of it a cosmos and formal thought is the organ of our comprehension. κρς.

UEBER DEN ASSOCIATIVEN VERLAUF DER VORSTELLUNGEN. Inaugural-Dissertation.

By E. W. Scripture, M. A., Fellow of Clark University. Leipzig: Wilhelm Engelmann. 1891.

This essay of 102 pages characterises most excellently some of the proceedings and methods of Professor Wundt's psychological laboratory. The author, a disciple of Wundt, is a native American who studied in Berlin, Zürich, and Leipzig, and took his degree of Doctor on the ground of this dissertation. The object of the treatise is not so much to solve as to formulate the problem of the associative course of concepts, and the author hopes that in a future treatise he will be able to propound his theory based upon the facts here related.

The experiments were made with the assistance of seven friends, among them German students, a doctor of philosophy, a doctor of medicine, and a teacher. They were of different nationality, three Germans, one Belgian, one Japanese, one

Englishman from the Cape, and two Americans, the author included. The apparatus used was so arranged that the person operated upon sat in the dark, before him was a plate of ground glass intercepting from a camera an image which was exposed for four seconds. Pictures of all kinds, colors, and plainly printed words were used. For other sense-impressions the observer was also seated in the dark. Several instruments for producing sounds were ready on a table. Tastes were effected by liquids which the person operated upon had to drink, and the sense of touch was investigated through handing him cards to which some small objects had been attached. The author was partly operator, partly observer, i. e. the person operated upon. The ideas evoked through the sense-impressions produced in this way, are enumerated in tabular form in the order in which they arose.

Among the experiments made in this way we find one kind which is of special interest. Sir William Hamilton made the remark in his *Lectures on Metaphysics* that unconscious ideas may serve as connecting links between two ideas otherwise unassociated. He represented his view in the following way: Let *A*, *B*, *C*, be three ideas, *A* does not suggest *C*, but both are associated with *B*. It happens that *A* is directly followed by *C* in consciousness. In such a case *A* may recall *B* and *B* may recall *C*, but *B* being a *minimum visibile* or *minimum audibile* does not enter consciousness. Thus the idea of the mount Ben Lomond called into Hamilton's mind the system of Prussian education. Subsequent reflection taught him that he had met on Ben Lomond a German. The recollection of the place was associated with the ideas—a German, Germany, Prussia. These ideas were too weak to enter consciousness yet they reawakened another idea which did enter consciousness, the system of Prussian education.

This is a mere suggestion of Hamilton's but Dr. Scripture proved its truth by actual experiment. He took cards containing some simple words, such as MENSCH, GEHEN, KOMMEN, BLUME, etc., and also Japanese words in Roman characters HANA, HITO, IUKU, KURU. To every word was attached another Japanese word in Japanese characters so that the same character appeared on HANA, and BLUME; HITO and MENSCH; JUKU and GEHEN; KURU and KOMMEN. The words were shown twice so as to give a stronger impression. The Japanese gentleman was excluded from these experiments, and indeed, the unknown Japanese characters which were only dimly or not at all remembered, evoked the corresponding words: HITO—MENSCH; KURU—KOMMEN; BLUME—HANA, etc. Dr. Scripture adds: "These associations were involuntary, the observer imagined them to be wrong, and could find no reason for the involuntary appearance of the words. He had not thought at all of the connecting links."

It appears that the links in a chain of concepts need not be all conscious and the result of his experiments in this line is formulated by Dr. Scripture as follows: A concept apperceived can bring another concept into the focus of consciousness although it was never associated with it, if there are other psychic elements of lower degrees or even outside of consciousness which are connected with both—provided

that there are no other elements stronger than these. The effect of the unconscious link however is much weaker than that which was conscious.

Pages 71-101 are devoted to the investigations of the after-effect of concepts. The phenomena of ideation being extremely complex, we cannot assume that the process of a so-called reproduced concept is analogous to the original idea. A sensation changes during its presence with reference to the degree of consciousness of its parts and even the concepts as a whole may be altered. The process is different according to circumstances. The renewed concepts differ from their originals, (1) in the degree of the consciousness of the whole idea, (2) in the degree of the consciousness of its parts among themselves, (3) in form, color, relations, etc., (4) in duration. In order to avoid the metaphysical influence of hypothetical theories we ought to avoid all kinds of terms suggestive of a theory and stick closely to a simple description of facts. Therefore Dr. Scripture proposes to discard such words as "retention, reproduction, revival," etc., and suggests the term "after-effect." Yet he adds, quoting from Wundt, "these after-effects themselves are as little ideas as the effects produced upon nerves and muscles by exercise can be called actions of will."

Dr. Scripture avoids explaining what he conceives these after-effects to be. We see no reason for disagreement and should say that the result of the after-effects is what generally goes by the name of "disposition." And a certain disposition is produced according to the law of the conservation of form in living structures. (See "The Soul of Man," pp. 418-424.)

Dr. Scripture is led by a consideration of his observations to the following statement: "Each concept is conditioned through the effects of the elements of the present state of consciousness and the after-effects of many (if not of all) previous elements of consciousness."

This result is not compatible with the theory of reproduction now almost universally accepted by the association-psychology. Wundt says: "If only certain single concepts were renewed, we might perhaps explain why in the memory-picture certain elements of a former reproduction are missing: but we could not explain why the elements of a concept change so often qualitatively as is indeed the case. This, it appears, is possible only because a memory-picture and others of a kindred nature affect each other mutually."

This will find explanation in the following experiment. The observer sees a dog, and thinks of a circus, which he saw a year ago. There is no direct association between the picture of the dog and the special reminiscence of that circus visited a year ago. The association was formed at the moment. Former sensations of dogs had their after-effects and this special reminiscence was localised.

Dr. Scripture maintains that Höffding's association theory contains too many hypothetical elements; it presupposes faculties of the soul to join like with like and to combine simultaneous or consecutive events.

KPS.